

### **REMARKS**

Claims 1-7 are now in the application. By this Amendment, claims 1, 2, and 4-6 have been amended to correct informalities but not to limit the claim scope. Claim 7 has been added. Support for claim 7 is found at least at page 2, lines 15-16, of Applicants' disclosure. No new matter has been added.

Claims 1-3, 5, and 6 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,010,111 to Hahn et al.

Claim 1 recites, among other features, (i) a low molecular weight styrene copolymer and (ii) a high molecular standard polystyrene (GPPS). The high molecular standard polystyrene is a homopolymer and not a copolymer. At least these features of independent claim 1 cannot reasonably be considered to be suggested in Hahn.

Hahn is directed to a flame resistant, expandable polystyrene. The polystyrene can be a homo- or copolymer. The Office Action relies on Hahn's teachings at col. 2, lines 20-24, for a feature that can reasonably be considered to correspond to the above-quoted low molecular weight styrene copolymer. However, for each principal component (a) taught in Hahn, comprising a polymer with a molecular weight of 60,000 to 200,000 and a polymer with a molecular weight of 500 to 5,000, the same polymer is used. i.e., either both components are homopolymers or both components are copolymers. In other words, the passage relied on by the Office Action would be understood by a person skilled in the art to refer to a low molecular styrene polymer with the same composition as the high molecular weight styrene polymer with a mean molecular weight of from 60,000 to 200,000.

Applicants note that with the preferred conventional suspension polymerization process described in col. 3, line 63 to col. 4, line 4, of Hahn, a mixture of a styrene copolymer with standard polystyrene (GPPS) cannot be obtained. In this process, the low molecular weight and high molecular weight fraction are polymerized in the same reaction vessel at the same time; and only polymers with a molecular weight distribution including high and low molecular weight fractions, having the same chemical composition, can be obtained. The use of the regulator

described at col. 3, line 67, and at col. 2, lines 25 to 27, leads to modification of the polymer chain length, but not to a modification of the chemical composition of the different molecular weight polymer fractions.

In addition, Hahn fails to suggest features corresponding to a standard polystyrene (GPPS) with a weight average molar mass  $M_w$  in the range from 220.000 to 300.000 g/mol, as recited in claim 7. Instead, Hahn teaches, at col. 1, line 67, a high molecular weight styrene polymer with a mean molecular weight of from 60,000 to 200,000.

Claims 2, 3, 5, and 6 are in condition for allowance for at least their respective dependence on an allowable claim 1, as well as for the separately patentable subject matter that each of these claims recites.

Claim 4 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Hahn in view of EP 0 126 459 to Biglione et al.

As appreciated by the Examiner, Hahn does not teach the claimed process steps of mixing the blowing agent at a temperature of at least 150 °C, cooling the polymer melt to at least 120 °C, and pelletizing the melt under water at a pressure in the range from 1 to 25 bar. Furthermore as explained above, Hahn does not teach the process step of preparing a mixture of styrene polymers comprising styrene copolymers with a low molecular weight and standard polystyrene with a high molecular weight.

Biglione suggests a process for the production of expandable granules of thermoplastic polymers. However, Biglione is silent about the molecular weight of the polystyrene. Especially, there is no hint to use styrene polymers of different molecular weight. Even if a person skilled in the art would combine the teaching of Hahn with Biglione, there would be no motivation or rationale to select the specific polymers with the specific molecular weights and to prepare a mixture before applying the process of Biglione.

Claim 4 is therefore also in condition for allowance.

In view of the above amendment, Applicants believe the pending application is in condition for allowance.

Applicants concurrently herewith submit the requisite fee for a Petition for a one-month Extension of Time. Applicants believe no additional fee is due with this response. However, if any additional fee is due, please charge our Deposit Account No. 03-2775, under Order No. 12810-00264-US1 from which the undersigned is authorized to draw.

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Respectfully submitted,

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